From:	BRENT_T
To:	Hodgson, Rich
Cc:	Vandendoren, Alain; Stuble, Bill; Potter, Dolly; Ventura, Mike
Subject:	TEC Project No. 04081 - Calciner Fuel Conversion from NG to Coal - Solvay Chemicals, Inc.
Date:	Thursday, October 28, 2004 8:23:41 PM
Attachments:	Memo.004.doc BRENT_T.vcf

Please see Memo.004.doc attached. This is TEC's review of DSC's recent proposal

<<Memo.004.doc>>

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MEMORANDUM

DATE: 27 Oct 04
TO: Rich Hodgson – Solvay Chemicals, Inc.
FROM: Brent F. Thomas, P.E. - Thomas Engineering Company
RE: Calciner Fuel Conversion from NG to Coal – Green River, WY
SUBJECT: Review of Detroit Stoker Company's proposal dated 25 Oct 04

Thomas Engineering Company (TEC) has received and reviewed Detroit Stoker Company's (DSC) proposal dated 25 Oct 04 and offers the following comments regarding same:

A. Page 1

1. Over Fire Air System

a. Overfir Air Fan (FN-14)

TEC recommends that the Centrifugal Overfire Air Fan (FN-14) not be included within DSC's scope of supply. It is TEC's opinion that the specification, supply and installation of this equipment item can be performed with essentially no impact on DSC's guarantee for the furnace modifications. TEC recognizes that DSC will need to provide the design criteria for this fan

Please note that DSC's proposal includes one (1) item. It is TEC's recommendation that the equipment for both calciners (CA1 and CA2) be purchased at the same time with a delayed shipping date for the equipment associated with CA1. It will be easier and more economical for all parties if the submittals for the equipment associated with CA1 and CA2 be prepared, received and reviewed at the same time. This philosophy has been incorporated into the preliminary project schedule recently provided to SCI for review and comment

The above comment applies to all other equipment items

b. Fan Outlet Control Damper

TEC assumes that this control damper is associated with FN-14 above

TEC recommends that the control damper not be included within DSC's scope of supply. It is TEC's opinion that the specification, supply and installation of this equipment item can be performed with essentially no impact on DSC's guarantee for the furnace modifications. TEC

recognizes that DSC will need to provide some of the design criteria for this equipment item

c. Discharge Expansion Joint

TEC assumes that this discharge expansion joint is associated with FN-14 above

TEC recommends that the discharge expansion joint not be included within DSC's scope of supply. It is TEC's opinion that the specification, supply and installation of this equipment item can be performed with essentially no impact on DSC's guarantee for the furnace modifications. TEC recognizes that DSC will need to provide the design criteria for this equipment item

d. Ductwork between Overfire Air Fan and Overfire Air Heater

TEC recommends that the duct not be included within DSC's scope of supply. It is TEC's opinion that the specification, supply and installation of this duct can be performed with essentially no impact on DSC's guarantee for the furnace modifications. TEC recognizes that DSC may want to review the design for this duct work so as to be assured that the duct has an acceptable head loss, etc.

TEC's interpretation of a "hanger strap" is a non-engineered support. This may not be what DSC has intended by use of this term. It is TEC's opinion that this duct will most likely require engineered supports rather than non-engineered supports.

B. Page 2

1. Over Fire Air System (continued)

a. Upper Front Wall Header

TEC recommends that this equipment item remain within DSC's scope of supply

b. Middle Front Wall Header

TEC recommends that this equipment item remain within DSC's scope of supply

c. Upper Rear Wall Header – No. 1

TEC recommends that this equipment item remain within DSC's scope of supply

Please note that this equipment item is identified by the same name for the following equipment item. TEC recommends that these two items be differentiated by some identification (TEC has elected to number them differently)

d. Upper Rear Wall Header – No. 2

TEC recommends that this equipment item remain within DSC's scope of supply

Please note that this equipment item is identified by the same name for the above equipment item. TEC recommends that these two items be differentiated by some identification (TEC has elected to number them differently)

e. Middle Rear Wall Header

TEC recommends that this equipment item be in DSC's scope of supply

f. Motorized Control Dampers

TEC recommends that this equipment item remain within DSC's scope of supply

g. Pressure Gauges

TEC recommends that Solvay Chemicals, Inc. (SCI) personnel consider having all common instrumentation be purchased from a single manufacturer so as to (i) decrease the amount of spare parts; and (ii) decrease the learning curve for repair and maintenance by SCI's maintenance personnel

If the above is acceptable to SCI, then TEC does not recommend that these instrument items be included in DSC's scope of supply.

The above paragraph applies to all instrumentation items.

If the above is not acceptable, TEC recommends that the pressure gauge for the Over Fire Air headers remain within DSC's scope of supply but the pressure gauge for the fan discharge not remain within DSC's scope of supply.

h. Pressure Transmitters

If the above paragraph regarding commonality for instrumentation is acceptable to SCI, then TEC does not recommend that these instrument items be included in DSC's scope of supply.

If the above is not acceptable, TEC recommends that the pressure transmitters for the Over Fire Air headers remain within DSC's scope of supply but the pressure transmitter for the fan discharge not remain within DSC's scope of supply.

2. Flue Gas Recirculation System

a. Duct between the Precipitator Discharge and the ID Fan inlet on the Existing Furnace

TEC recommends that the duct not be included within DSC's scope of supply. It is TEC's opinion that the specification, supply and installation of this duct can be performed with essentially no impact on DSC's guarantee for the furnace modifications. TEC recognizes that DSC may want to review the design for this duct work so as to be assured that the duct has an acceptable head loss, etc.

TEC's interpretation of a "hanger strap" is a non-engineered support. This may not be what DSC has intended by use of this term. It is TEC's opinion that this duct will most likely require engineered supports rather than non-engineered supports.

b. Centrifugal FGR Fan

TEC recommends that the FGR Fan not be included within DSC's scope of supply. It is TEC's opinion that the specification, supply and installation of this equipment item can be performed with essentially no impact on DSC's guarantee for the furnace modifications. TEC recognizes that DSC may want to review the design or specification sheet for this equipment item so as to be assured that the equipment item is in conformance with DSC design criteria

c. FGR Fan Inlet Control Damper

TEC recommends that the control damper not be included within DSC's scope of supply. It is TEC's opinion that the specification, supply and installation of this equipment item can be performed with essentially no impact on DSC's guarantee for the furnace modifications. TEC recognizes that DSC will need to provide some of the design criteria for this equipment item

d. Duct From FGR Fan to the Inlet of the Gas-Air Mixing Device

TEC recommends that the duct not be included within DSC's scope of supply. It is TEC's opinion that the specification, supply and installation of this duct can be performed with essentially no impact on DSC's guarantee for the furnace modifications. TEC recognizes that DSC may want to review the design for this duct work so as to be assured that the duct has an acceptable head loss, etc.

3. TEC's interpretation of a "hanger strap" is a non-engineered support. This may not be what DSC has intended by use of this term. It is TEC's opinion that this duct will most likely require engineered supports rather than non-engineered supports.

C. Page 3

1. Flue Gas Recirculating System (continued)

a. Motorized Control Damper

TEC recommends that the motorized control damper not be included within DSC's scope of supply. It is TEC's opinion that the specification, supply and installation of this equipment item can be performed with essentially no impact on DSC's guarantee for the furnace modifications. TEC recognizes that DSC will need to provide some of the design criteria for this equipment item

b. Gas-Air Mixing Device

TEC recommends that this equipment item remain within DSC's scope of supply

c. Flow Gas Flow Element

See discussion above on other instrument items.

d. Duct between the FGR Fan and FGR Booster Fan

TEC recommends that the duct not be included within DSC's scope of supply. It is TEC's opinion that the specification, supply and installation of this duct can be performed with essentially no impact on DSC's guarantee for the furnace modifications. TEC recognizes that DSC may want to review the design criteria for this duct

e. FGR Booster Fan Inlet Control Damper

TEC recommends that the control damper not be included within DSC's scope of supply. It is TEC's opinion that the specification, supply and installation of this equipment item can be performed with essentially no impact on DSC's guarantee for the furnace modifications. TEC recognizes that DSC will need to provide some of the design criteria for this equipment item

f. Duct between the FGR Booster Fan and FGR Headers

TEC recommends that a portion of this duct remain within DSC's scope of supply. The point of transition between DSC's scope of supply and the duct designed by others will need to be established

g. Manual Control Dampers

If these control dampers are to be installed in that portion of the duct between the FGR Booster Fan and the FGR Headers, then TEC recommends that these control dampers remain within DSC's scope of supply. Otherwise, TEC does not recommend that these equipment items be within DSC's scope of supply

h. FGR Headers with Stainless Steel Nozzles

TEC recommends that these nozzles remain within DSC's scope of supply

i. Pressure Gauges

See previous discussion on instrumentation

j. Pressure Transmitters

See previous discussion on instrumentation. TEC recommends that the transmitter to be installed at the discharge of the FGR fan not remain within DSC's scope of supply

2. Water Injection System

TEC recommends that this equipment item remain within DSC's scope of supply

3. Underthrow Fuel Distributors

TEC recommends that this equipment item remain within DSC's scope of supply

D. Page 4

1. Underthrow Fuel Distributors (continued)

a. Controls

See previous discussion on controls

E. Page 5

1. Underthrow Fuel Distributors (continued)

a. Drawings and Documents

Electronic copies of all drawings prepared by DSC shall be (i) prepared in accordance with SCI CAD standards; and (ii) an electronic copy of all drawings prepared by DSC are to be provided to SCI in AutoCAD format

b. Control Strategy Drawings

TEC is not sure what these drawings entail. TEC recommends that additional information be provided by DSC on this item.

c. Installation, Operation and Maintenance Manual

DSC is recommending issuance of one (1) manual. TEC recommends that multiple copies of this manual be provided to SCI. In previous specifications prepared by SCI for the above referenced project, eight (8) copies have been required

2. Lower Front Grate Air Seals

TEC recommends that this scope of work remain within DSC's scope of supply

3. Rear Tuyeres

TEC recommends that this scope of work remain within DSC's scope of supply

F. Page 6

1. Closure Plates

TEC recommends that this scope of work remain within DSC's scope of supply

2. Extension Front Arrangement

TEC recommends that this scope of work remain within DSC's scope of supply

With regards to the Extension Front Arrangement Drawing, this drawing must be an installation quality drawing

3. Side and Rear Stoker to Furnace Air Seals

TEC recommends that this scope of work remain within DSC's scope of supply

G. Page 7

1. Replacement Parts

TEC recommends that this scope of work remain within DSC's scope of supply

2. Offering No. 2 – Planetary Grate Drive

TEC recommends that this scope of work remain within DSC's scope of supply

H. Page 8

1. Offering No. 3 – Conical Distributors

TEC recommends that this scope of work not remain within DSC's scope of supply

DSC's proposal states that the current offering does not include the drive gate/slip joint or the feeder hopper. TEC recommends that DSC provide an explanation as to why these items have been omitted from DSC's proposal offering

I. Page 9

1. Furnished by Purchaser

a. Existing OFA Fan

This should probably be the Underfire Air Fan

b. Existing FD Fan

This should probable be the Tempering Air Fan

J. Page 10

1. O.S.H.A. Facility

It should be noted that SCI's facility is an MSHA facility

K. Page 11

1. Guarantees

TEC has not had an opportunity to review the information for guarantees with other SCI documents to offer comment at this time. A review will be provided under separate cover.

Please note that the stipulation that the minimum heating value of coal is to be 10,000 BTU/lb does not conform with documents previously prepared by SCI with regards to the heating value of coal supplied to SCI's facility.

L. Page 14

1. Delivery Schedule

In TEC's opinion, the schedule information provided by DSC is incomplete with regards to the schedule information requested of DSC by TEC.

M. Miscellaneous

In TEC considers DSC's proposal to be non-responsive. There are numerous items in TEC's scope of work that have not been addressed by DSC. In TEC's opinion, these items should have been addressed by DSC

TEC recommends that additional information be prepared and presented by DSC with regards to how DSC and other parties associated with the above referenced project are to interface the various design responsibilities.

TEC recommends that if DSC's installation proposal is accepted by SCI, that DSC commit to comply with the project schedule as approved by SCI and that DSC acknowledge that other parties will be working in the same area as DSC personnel and that strict coordination with these parties will be required without cost impact to SCI

TEC has prepared a draft agreement with general conditions between Seller and Buyer. If these documents are approved by SCI, a copy of same should be provided to DSC for their review and comment

If you should have any additional questions or should you desire to discuss any of the above in further detail, please contact TEC at your earliest convenience.